

REMARKS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 1-33 and 36-47 are pending in the present application. Claims 34 and 35 are cancelled and Claims 44-47 are added by the present amendment.

In the outstanding Office Action, the Information Disclosure Statements (IDS) filed on February 26, and July 23, 2002, were objected to; the drawings were objected to; Claims 6, 25, and 26 were objected to; Claims 1, 2, 7, 14, 15, 24-27, 29, and 32-34 were rejected under 35 U.S.C. § 102(e) as anticipated by Mouri (U.S. Patent No. 6,320,646 B1); Claims 3-5 were rejected under 35 U.S.C. § 103(a) as unpatentable over Mouri in view of Kendall (U.S. Patent No. 5,508,518); Claims 9, 10, 37-39, and 41-43 were rejected under 35 U.S.C. § 103(a) as unpatentable over Kazushi (Japanese Patent No. 6-176998) in view of Mouri; Claims 16-23 and 36 were allowed; and Claims 11-13, 28, 30, 31, 35, and 40 were indicated as allowable if rewritten in independent form.

Applicants thank the Examiner for the early indication of allowable subject matter.

The specification is amended to describe newly added Figure 6 and these amendments find support in the originally filed Claim 6. No new matter has been added.

Regarding the Information Disclosure Statements, it is respectfully submitted that the references of the International Search Report filed as an IDS on July 23, 2002, were filed on a PTO-1449 form with the IDS filed on February 26, 2002, which is enclosed herewith with a copy of the filing receipt for the Examiner's convenience. Accordingly, it is respectfully

Regarding the objection to the drawings, a new Figure 6 is submitted with this response, showing a machine chamber 14 and an exposure chamber 16 formed within a same chamber 15, as recited in originally filed Claim 6. Further, Claims 25 and 26 recite "another chamber" that is shown in Figure 1 as chamber 18 housing a mask transportation system made up of a reticle library 80, a reticle loader 82, and a blow port 90. No new matter has been added. Accordingly, it is respectfully requested that this objection be withdrawn.

Regarding the objection to Claims 6, 25, and 26, Applicants respectfully submit that newly added Figure 6 shows the features of Claim 6, and originally filed Figure 1 shows the features of Claims 25 and 26, as discussed above. Accordingly, it is respectfully requested that this objection be withdrawn.

Claims 1, 2, 7, 14, 15, 24-27, 29, and 32-34 were rejected under 35 U.S.C. § 102(e) as anticipated by Mouri. That rejection is respectfully traversed.

Independent Claim 1 is directed to an exposure apparatus having an exposure apparatus main body, an exposure chamber, an air conditioner, a machine chamber, a supply path of gas, a first chemical substance removing filter, an exhaust part, and a second chemical substance removing filter. The supply path of gas supplies air conditioning from the machine chamber to the exposure chamber. The first chemical substance removing filter is arranged in a part of the supply path.

In a non-limiting example, Figure 1 shows the exposure apparatus 10, the exposure apparatus main body 22, the exposure chamber 16, the air conditioner 58, the machine chamber 14, the supply path 24, the first chemical substance removing filter CF3, the exhaust

Placing the first chemical substance removing filter in a part of the supply path of the claimed exposure apparatus advantageously removes chemical substances generated at the blower 58 in the machine chamber 14.¹

Mouri discloses in Figure 2 a chemical filter "cf" arranged in an exhaust path "ra" and a chemical filter "cf" arranged at an outside air inlet "oa." Further, Mouri discloses at column 4, lines 4-7, and shows in Figure 2, an "air filter g" arranged in a supply path. However, Mouri does not teach or suggest "a first chemical removing filter arranged in part of said supply path," as recited in Claim 1.

Kazushi discloses a filter arranged in a supply path, but fails to teach or suggest a chemical removing filter. In addition, Kazushi also does not teach or suggest arranging a chemical filter in a return path as recited in Claim 1.

There are a few causes that generate chemical substances inside an exposure apparatus. Chemical substances (i) may enter with outside air through an outside air inlet, (ii) may be generated by a blower of the machine chamber, and/or (iii) may be generated within the exposure chamber from a resist of a substrate. For these reasons, the device of Claim 1 provides the first chemical removing filter in the supply path to prevent chemical substances of the outside air or generated in the blower of the machine chamber from entering into the exposure chamber. In addition, the claimed exposure apparatus provides the second chemical filter in the return path to remove chemical substances from the air that has passed through the exposure chamber and would be returned into the exposure chamber.

Both Mouri and Kazushi do not consider that chemical substances can be generated

that prevent chemical substances generated by the blower from entering the exposure chamber.

In view of these foregoing comments, it is respectfully submitted that independent Claim 1 and each of the claims depending therefrom patentably distinguish over Mouri and Kazushi.

Independent Claim 24 is directed to an exposure apparatus having a blow port of gas for air conditioning supplied into an exposure chamber and the blow port is provided in a boundary area between the exposure chamber and another chamber.

In a non-limiting example, Figure 1 shows the exposure chamber 16 and another chamber 18, and the blow port of gas 90 provided in a boundary area between the exposure chamber 16 and the another chamber 18.

Neither Mouri nor Kazushi teaches or suggests "a blow port of gas ... provided in a boundary area between said exposure chamber and said another chamber."

Mouri discloses a structure to supply air in a down flow such that a wafer loader portion is arranged in another chamber separate from an exposure apparatus main body and a reticle loader. However, Mouri does not teach or suggest a blow port provided in a boundary area between an exposure chamber and another chamber. In addition, Mouri is silent about a direction of the supplied air into the chamber enclosing the wafer loader portion and what type of blow port is used.

Kazushi discloses a structure in which air is supplied in a down flow such that a wafer loader portion is arranged in another chamber separate from an exposure apparatus main body. However, Kazushi does not teach or suggest a blow port provided in a boundary area between an exposure chamber and another chamber.

Further, it is known that when air is supplied in a down flow, a space in a direction of an overall height of the exposure apparatus is required. In this regard, it is preferable to supply air in a side flow, but a maintenance problem affects the apparatus when the air is supplied from a side flow. These problems of Mouri and Kazushi are solved in Claim 24 by the claimed "blow port ... provided in a boundary area between said exposure chamber and said another chamber." Applicants note that neither Mouri nor Kazushi considers the maintenance problem occurring when the side flow air supply is used.

In view of these foregoing comments, it is respectfully submitted that independent Claim 24 and each of the claims depending therefrom patentably distinguish over Mouri and Kazushi.

Claims 3-5 were rejected under 35 U.S.C. § 103(a) as unpatentable over Mouri in view of Kendall. That rejection is respectfully traversed.

The outstanding Office Action relies on Kendall for teaching the use of bellows-like members 56 and 58 that are missing in Mouri. However, Kendall does not overcome the deficiencies of Mouri discussed above. In addition, Claims 3-5 depend on independent Claim 1, which is believed to be allowable. Accordingly, it is respectfully submitted that dependent Claims 3-5 patentably distinguish over Mouri and Kendall.

Claims 9, 10, 37-39, and 41-43 were rejected under 35 U.S.C. § 103(a) as unpatentable over Kazushi and Mouri. That rejection is respectfully traversed.

Claims 9 and 10 depend on independent Claim 1, which is believed to be allowable. Accordingly, it is respectfully submitted that Claims 9 and 10 are also allowable.

chemical substance removing filter is connected to the first and second return ducts to remove

chemical impurities from both the gas exhausted from the first chamber and the gas exhausted from the second chamber.

In a non-limiting example, Figure 1 shows the first and second return ducts 48 and 42 corresponding to the first and second chambers 22 and 20, respectively.

By providing a return duct for each chamber, the apparatus of Claim 37 advantageously achieves independent temperature control and dust prevention for each chamber of the device. In addition, the exposure apparatus of Claim 37 advantageously has a chemical filter shared by the first and second ducts, making it easier to replace the chemical filter during a maintenance operation.

Mouri discloses in Figure 2 a single return duct "ra" for all chambers. Therefore, Mouri does not teach or suggest first and second return ducts corresponding to first and second chambers, respectively.

Kazushi discloses a structure in which a return duct from a wafer loader chamber and a return duct from a chamber including a reticle loader and an exposure apparatus main body are integrated. Therefore, Kazushi do not teach or suggest arranging a single chemical filter for both return ducts, as recited in independent Claim 37.

Both Mouri and Kazushi fail to recognize that time and labor necessary for replacing filters in each of the ducts are reduced by using one chemical filter for both the first and second ducts, as recited in independent Claim 37. Accordingly, it is respectfully submitted that independent Claim 37 and each of the claims depending therefrom patentably distinguish over Mouri and Kazushi.

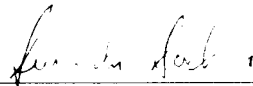
detail, new Claims 44-47 are supported by the specification at least at, for example, page 38.

line 26, to page 39, line 17. No new matter has been added. Independent Claim 44 and dependent Claims 45-47 include subject matter recited in the allowed Claims 16-23 and 36, i.e., a controller that controls the cooler so that condensation does not occur on the surface of the cooler. Accordingly, it is respectfully submitted that new Claims 44-47 are also allowable.

Consequently, in light of the above discussion and in view of the present amendment, the present application is believed to be in condition for allowance and an early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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